

CRAY VALLEY

MATERIAL SAFETY DATA SHEET

Version : August, 22. 2003

1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

EPOVIA H-350T

SUPPLIER OR COMPANY NAME

NAME

CRAY VALLEY KOREA CO., LTD.

FULL ADDRESS

Chonju 3rd Industrial Complex, 821-1 Yongam-lee, Bongdong-eub, Wanju-gun, Chollabuk-do,
565-900 Korea.

TELEPHONE

+ (82) 63 260 2181

FAX

+ (82) 63 261 6431

EMERGENCY TELEPHONE NUMBER

2 - COMPOSITION / INFORMATION ON INGREDIENTS

PREPARATION

CHEMICAL NAME OR GENERIC NAME

UNSATURATED POLYESTER RESIN

COMPONENTS OR IMPURITIES CONTRIBUTING TO HAZARDS

NAME

Styrene

Symbols

R Phrases

S Phrases

Index No.

CAS No.

Xn

R 10

S 2

601-026-00-0

100-42-5

R 20

S 23

R 36/38

Conc. Range

40 - 46%

(Remainders : Unsaturated polyester only)

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3 – HAZARDS IDENTIFICATION

SPECIFIC HAZARDS

Flammable

ADVERSE HUMAN HEALTH EFFECTS

Harmful by inhalation

Irritating to eyes and skin

PHYSICAL AND CHEMICAL HAZARDS

The mixture of product vapor and air could be explosive.

Strongly exothermic polymerization may be caused by:

Heat

Free radical formers

Peroxides

4 – FIRST AID MEASURES

INHALATION

Take person out of the contaminated area. Remove patient to fresh air.

Call a doctor in case of doubt or if symptoms persist.

SKIN CONTACT

Take off all contaminated clothing.

Wash in soap and water and rinse with water.

EYE CONTACT

Wash immediately (15 mins.) with water, opening eyelids.

If irritation continues, see an ophthalmologist.

INGESTION

Do not induce vomiting.

Put under medical supervision.

If swallowed, seek immediate medical advice and show container or label to the doctor.

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5 – FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

SUITABLE

Powder, foam, carbon dioxide, sand and pulverized water.

NOT SUITABLE

Water jet

SPECIFIC HAZARDS

By combustion, formation of toxic products: carbon, carbon monoxide and carbon dioxide

SPECIFIC METHODS

Cool the container with sprayed water to avoid polymerization.

Eliminate all sources of combustion.

PROTECTION OF FIRE-FIGHTERS

Wear individual breathing apparatus.

OTHERS

Treat as hydrocarbon fire.

Limit spreading of extinguishing fluids.

6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Avoid inhaling vapors.

Wear protective equipment.

Glove – Goggles – Boots.

Wear self-contained breathing apparatus.

ENVIRONMENTAL PRECAUTIONS

Do not discharge in sewers.

Do not allow this chemical to enter the environment.

If the product contaminates lakes, rivers or sewers, inform appropriate authorities in accordance with local regulations.

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METHODS OF CLEANING UP

RECOVERY

Spread sand.

Correct the product in a container pending future destruction.

DISPOSAL

Burn in an approved installation for liquids.

Polymerized product: discharge authorized.

INCOMPATIBLE MATERIALS

Wood sawdust

7 – HANDLING AND STORAGE

HANDLING

PREVENTION OF WORKER EXPOSURE

Collect vapors at source.

When using, workplace ventilation is required – NO SMOKING.

PREVENION OF FIRE AND EXPLOSION

Do not smoke when using.

Take precautionary measures against static discharges.

STORAGE

STORAGE CONDITION

SUITABLE

Keep at temperature not exceeding 30C.

Keep container tightly closed in a cool, well ventilated place.

TO AVOID

Sunlight, heat and sources of ignition (NO SMOKING)

INCOMPATIBLE MATERIALS

Strong oxidizing agents.

Catalysts and accelerators.

PACKING MATERIALS

RECOMMENDED

GRP Tanks.

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Metal packing except aluminum, copper or copper alloy.

NOT SUITABLE

Aluminum

Copper or copper alloy and plastics.

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS (TLV-TWA, TLV-STEL)

PRODUCT NAME

Styrene

8 hours (TLV-TWA) Short period (TLV-STEL) According to

ppm mg/m3 ppm mg/m3

50 215 FR

8 hours (TLV-TWA) Short period (TLV-STEL) According to

ppm mg/m3 ppm mg/m3

20 40 (30mins) DE (MAK)

8 hours (TLV-TWA) Short period (TLV-STEL) According to

ppm mg/m3 ppm mg/m3

100 250 (10mins) UK

8 hours (TLV-TWA) Short period (TLV-STEL) According to

ppm mg/m3 ppm mg/m3

50 100 (15mins) USA

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTIVE EQUIPMENT

Do not breathe vapors.

In case of insufficient ventilation, wear suitable respiratory equipment.

HAND PROTECTION

Wear solvent-proof gloves.

EYE PROTECTION

Wear glasses.

SKIN AND BODY PROTECTION

Wear suitable protective clothing.

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Remove working clothed after work.

SPECIFIC HYGIENE MEASURES

When using do not eat, drink or smoke.

9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

PHYSICAL STATE

Liquid

COLOUR

Turbid blue

ODOUR

Styrene

RISK OF FIRE OR EXPLOSION

FLASH POINT

31C (1)

AUTO-IGNITION TEMPERATURE

490C (1)

EXPLOSIVE OR FLAMMABLE LIMITS IN AIR

Lower	Upper
1.1%	6.1% (1)

VAPOR PRESSURE

6hPa @ 20C (1)

DENSITY

RELATIVE DENSITY (WATER)

1.05 – 1.15

SOLUBILITY

IN WATER

Insoluble in water

IN ORGANIC SOLVENTS

Soluble in most organic solvents.

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VISCOSITY

450 – 650mPa.s @ 25C

OTHERS

(1) = Styrene

10 – STABILITY AND REACTIVITY

STABILITY

Stable under normal storage condition.

CONDITION TO AVOID

Light.

Heat.

Sources of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS

By thermal composition, formation of CO, CO₂.

HAZARDOUS REACTION WITH

Exothermic polymerization may occur by:

Strong oxidizing agents.

Peroxides.

Radical formers.

11 – TOXICOLOGICAL INFORMATION

SKIN IRRITATION

Irritating to skin.

EYE IRRITATION

Irritating to eyes.

INHALATION

Harmful by inhalation.

Symptoms and signs include:

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Headache

Dizziness

Tiring

12 – ECOLOGICAL INFORMATION

PERSISTANCE / DEGRADABILITY

Easily biodegradable.

(Styrene)

POSSIBLE ENVIRONMENTAL IMPACT / ECOTOXICITY

Do not discharge into drains or the environment, dispose to an authorized waste collection point.

OTHERS

13 – DISPOSAL CONSIDERATIONS

MEASURES FOR DISPOSAL

Incineration in approved installation.

NEUTRALIZING OR DESTROYING PROCEDURE OF PRODUCT

Incineration for liquid resins. Curing then incineration for solid resins.

DESTROYING PROCEDURE OF CONTAMINATED PACKING

Cleaned packaging may be recycled.

14 – TRANSPORT INFORMATION

INTERNATIONAL REGULATION

SEA (IMDG)

Proper shipping name

Resin, flammable liquid solutions

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<u>Page IMDG code</u>		3379
<u>UN No.</u>		1866
<u>Class</u>	3	
<u>Packaging group</u>		III
<u>Label</u>	3	
<u>EMS No.</u>		3-05
<u>MFAG</u>		310

AIR (ICAO / IATA)

<u>UN / ID No.</u>	1866
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PROPER SHIPPING NAME

Resin, flammable liquid solutions

<u>Class / Division</u>	3
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<u>Label</u>	3
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<u>Packaging group</u>	III
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LAND (RID/ADR, RTMDR/RTMDF)

Transport name

Resin, flammable liquid solutions

<u>Class</u>	3 / 31 degrees by Celsius
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<u>Label</u>	3
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<u>Hazard identification No.</u>	30
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<u>Substance identification No.</u>	1866
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15 – REGULATORY INFORMATION

EEC REGULATION

EEC LABELLING

Contains styrene.

R Phrases

R 10

Flammable.

R 20

Harmful by inhalation.

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R 36/38

Irritating to eyes and skin.

S Phrases

S 23

Do not breathe gas/fumes/vapor/spray.

S 26

In case of with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39

Wear suitable gloves and eye/face protection.

Symbols

Xn

Harmful

16 – OTHER INFORMATION

RESTRICTED USE

OTHERS

This sheet completes the technical sheet of use but it does not replace it. The information contained in this sheet is based on our knowledge of the product at the date August, 20, 2003.